

**DEPARTMENT OF MINES, MINERALS AND ENERGY  
DIVISION OF MINED LAND RECLAMATION**

**GUIDANCE MEMORANDUM<sup>1</sup> No. 32-10 Revised**

**Revision Date:** April 4, 2011

**Subject:** Permitting Guidance for Surface Coal Mining Operations  
to Protect Virginia's Water Quality Standards

This revised Guidance Memorandum modifies the September 2, 2010, Guidance Memorandum 32-10 to simplify and clarify how the Division of Mined Land Reclamation (DMLR) will review the combined Coal Surface Mining Operation (CSMO) and National Pollutant Discharge Elimination System (NPDES) permit for coal mining operations in the Commonwealth.

In reviewing an application, DMLR staff will utilize both the Virginia Coal Surface Mining Reclamation Regulations (§ 4 VAC 25-130-700.1 et seq.) and the Virginia's Pollutant Discharge Elimination System Regulations (§ 9 VAC 25-31-10 et seq.) to determine whether or not the application meets all applicable regulatory requirements of both sets of regulations.

For any proposed NPDES permitted discharge(s), DMLR staff will conduct Reasonable Potential (RP) analyses and develop site-specific NPDES permit conditions for surface coal mining operations using a holistic watershed management approach. This holistic approach may include the use of Total Maximum Daily Loads (TMDL) reports, biological and chemical monitoring, representative data (when available), and where demonstrated to be necessary pursuant to 45.1-254(J) of the Code of Virginia, whole effluent toxicity (WET) testing.

If the results of the RP analysis indicate that there may be a problem with the discharge of a proposed outfall, DMLR may require additional monitoring or establish applicable limits or other conditions in the permit.

Pursuant to Section § 9VAC 25-31-940 A and B, DMLR will refer to the Department of Environmental Quality's (DEQ) Virginia Pollutant Discharge Elimination (VPDES) Permit Regulations, Water Quality Standards Regulations, and the DEQ permit development guidance in evaluating any NPDES permit application and in developing draft NPDES permit conditions.

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<sup>1</sup> This Memorandum is to be considered a guideline issued under the authority of *Va. Code* § 45.1-230.A1 ,which states:

"In addition to the adoption of regulations under this chapter, the Director may at his discretion issue or distribute to the public interpretative, advisory or procedural bulletins or guidelines pertaining to permit applications or to matters reasonably related thereto without following any of the procedures set forth in the Administrative Process Act (§ 2.2-4000 et seq.). The materials shall be clearly designated as to their nature, shall be solely for purposes of public information and education, and shall not have the force of regulations under this chapter or under any other provision of this Code."

This Memorandum does not impose legally binding requirements on NPDES permittees and may not apply to a particular situation depending on the circumstances.

Applicants and consultants are encouraged to meet with the appropriate DMLR Technical staff prior to selection of monitoring/sampling points to ensure the monitoring/sampling locations will be acceptable for any proposed permit application.

As part of any RP analysis, DMLR must determine whether or not a discharge has the reasonable potential to cause or contribute to an in-stream excursion of a narrative or numeric water quality standard. Virginia's narrative water quality standard is found at § 9VAC25-260-20. General criteria:

*A. State waters, including wetlands, shall be free from substances attributable to sewage, industrial waste, or other waste in concentrations, amounts, or combinations which contravene established standards or interfere directly or indirectly with designated uses of such water or which are inimical or harmful to human, animal, plant, or aquatic life. Specific substances to be controlled include, but are not limited to: floating debris, oil, scum, and other floating materials; toxic substances (including those which bioaccumulate); substances that produce color, tastes, turbidity, odors, or settle to form sludge deposits; and substances which nourish undesirable or nuisance aquatic plant life. Effluents which tend to raise the temperature of the receiving water will also be controlled. Conditions within mixing zones established according to 9VAC25-260-20 B do not violate the provisions of this subsection.*

*B. The board may use mixing zone concepts in evaluating limitations for Virginia Pollutant Discharge Elimination System permits.*

Virginia has a long and established practice of interpreting and implementing its water quality standards, including the narrative standard, using a weight-of-evidence approach. Pursuant to this approach, compliance with water quality standards is not determined based on isolated or incidental chemical, toxicity or biological data, but rather on a holistic review of all relevant data and information with proportionate weight given to the relative robustness, accuracy and precision of each line of evidence.

### **REASONABLE POTENTIAL ANALYSIS**

DMLR will evaluate RP for all outfalls to ensure compliance with state water quality standards, including the narrative standard. (See § 9VAC 25-31-220.D.1.)

It should be noted that according to the Discharge Monitoring Reports (DMR) submitted to DMLR by coal companies as part of their respective NPDES permits, approximately half of Virginia's permitted coal mining outfalls never discharge and many remaining outfalls discharge intermittently, primarily discharging in response to precipitation. The stormwater-related intermittent discharges have limited potential for environmental impacts, as they discharge only in response to precipitation events and not during critical low flow conditions. Outfalls that have no potential to discharge will be considered to have no RP.

The applicant may submit information requesting that two or more individual outfalls be represented by sampling a single outfall that is representative of the other outfalls. The data from that single representative outfall should exemplify the other outfalls for which it is representative. The following are examples of factors DMLR will consider when deciding whether to authorize the applicant to test only one representative outfall and to apply that data to other outfalls:

### **Representative Outfall Factors**

- Frequency of discharge (e.g., continuously, intermittently or attributed to a precipitation event);
- Drainage area controlled;
- Location within geological strata;
- Source of precipitation runoff;
- Discharge location (e.g. within the same hydrologic unit code, HUC 12 watershed or TMDL watershed, whichever is smaller in area);
- Any other criteria determined by DMLR to be relevant in determining whether or not any outfall is representative of other outfalls.

DMLR has authority to require baseline chemical monitoring pursuant to state and federal law. The applicant will consult with DMLR to determine the specific monitoring data and locations necessary and appropriate for the specific project.

In deciding which permit conditions are needed for a new or expanded discharge permit, DMLR will perform a RP analysis for each proposed discharge. DMLR will also perform a RP analysis at permit renewal for existing permits. This analysis will include the potential for the permit's sediment control structures to discharge, as well as consideration of the nature of the discharge (whether or not adequate flow is available in the receiving streams, whether discharges will occur during precipitation events, mining practices, geology, drainage area, etc.). As part of any RP analysis, DMLR will consider data from approved representative outfalls to determine the RP for a given outfall.

### **Analyses Required**

When developing permit conditions, monitoring requirements, etc., DMLR will evaluate RP for all outfalls based on chemical and flow information provided in the permit application, as well as other available and relevant data. Appropriate numeric or non-numeric limits or other conditions will be developed if RP is indicated at the time of these evaluations.

Note: Instream water quality standards are based on dissolved metal concentrations. The metal analyses for these samples may be for total metals in lieu of dissolved metal concentrations. If metal analyses concentrations exceed instream standards, the permittee then will be required to collect dissolved metal samples for those specific metals exceeding instream standards to confirm whether or not the standards have been met.

### **Instream Biological Surveys**

The Virginia Stream Condition Index (VASCI) protocol will be used for instream biological surveys. All biological sampling should be done in accordance with the Virginia Department of Game and Inland Fisheries' scientific collection permit requirements.

In order for the applicant to produce an acceptable VASCI score, the applicant is strongly encouraged to have a DEQ approved Level III Quality Assurance Project Plan as well as laboratory and field standard operating procedures per the Virginia Citizen Water Quality Monitoring Program.

If the aquatic ecosystem at the assessment stations, prior to initiation of the permitted activity, is not determined to be impaired based on the VASCI score and relevant DEQ listing guidance, then one measure of an acceptable future biological condition would be a VASCI score greater than or equal to 60, subject to the index variability in the VASCI result. In determining whether a lower VASCI score represents an unacceptable condition, the DMLR will utilize best professional judgment, including a holistic examination of the health of the aquatic ecosystem.

If the aquatic ecosystem at the assessment stations, prior to initiation of the permitted activity, is determined to be impaired based on the VASCI score and relevant DEQ listing guidance, then the applicant will need to identify existing conditions within the watershed that may be contributing to the problem. A future VASCI score greater than or equal to the baseline value or compliance with TMDL requirements may represent an acceptable future condition.

### **RECOMMENDED CONTROL MEASURES**

The applicant can implement any of a number of controls to protect the aquatic ecosystem and to reduce or minimize impacts to the stream. Some examples of control measures that may be included as non-numeric limits or other conditions, where justified, in the combined CSMO/NPDES permit include, but are not limited to, the following where practical:

- Test overburden to determine the material that contains any constituents determined to be of concern from a receiving water quality perspective, so it can be isolated through material handling or other methods;
- Minimize the amount of area disturbed at one time;
- Minimize stormwater contact with pulverized material;
- Increase stream buffer zones;
- Minimize fill areas;
- Construct fills so as to minimize infiltration from precipitation events;
- Revegetate disturbed areas as quickly as practical;
- Develop a plan to minimize adverse impacts to resident aquatic community

- Conduct Toxicity Identification and/or Reduction Evaluation pursuant to EPA's TSD<sup>2</sup>;
- Segregate weathered rock and return to surface;
- Expedite reclamation;
- Enhance riparian plantings;
- Use natural stream restoration techniques.

The permit will allow for a schedule of compliance, where appropriate, to implement any numeric or non-numeric limits or other conditions established by DMLR. Such schedule may extend beyond the 5-year permit term, if justified in accordance with applicable federal and state law and guidance.

#### **REOPENER CLAUSE**

The permit will contain a reopener clause allowing DMLR to modify or revoke the permit if prescribed controls do not attain and maintain applicable water quality standards. (See § 9VAC 25-31-220 D.1.e.3.d.) The permit may also be reopened if, after a sufficient amount of data has been collected, the agency determines that RP does exist.

Should you have questions regarding this Guidance Memorandum, please contact the DMLR Technical Services Manager at (276) 523-8156.

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<sup>2</sup> EPA's 1991 *Technical Support Document for Water Quality-based Toxics Control* ("TSD") as incorporated in the DEQ's Guidance Memo No. 00-2011: *"Guidance on Preparing VPDES Permit Limits, dated August 24, 2000"*.